CLAIMS:

1. A method of forming a capacitor comprising:

forming a first capacitor electrode;

forming a first layer of a first capacitor dielectric material over the first capacitor electrode;

forming a second layer of the first capacitor dielectric material on the first layer; and

forming a second capacitor electrode over the second layer of the first capacitor dielectric material.

2. The method of claim 1 comprising forming the second capacitor electrode to impart one of compressive or tensile stress on the second layer of the first capacitor dielectric material during second electrode formation.

3. The method of claim 2 comprising forming the second capacitor electrode to predominately comprise a material selected from the group consisting of TiN_X, WN_X, TaN_X, $PtRh_X$, $PtRu_X$, $PtIr_X$, and mixtures thereof.

4. The method of claim 2 comprising doping the second capacitor electrode during its formation with a conductivity enhancing impurity to achieve a selected stress on the second layer of the first capacitor dielectric material.

5. The method of claim 1 comprising initially forming the first layer of first material to be amorphous.

6. The method of claim 1 comprising initially forming the first layer of first material to be crystalline.

7. The method of claim 1 comprising initially forming the second layer of first material to be amorphous.

8. The method of claim 1 comprising initially forming the second layer of first material to be crystalline.

9. The method of claim 1 comprising initially forming the first layer of first material to be amorphous, and initially forming the second layer of first material to be amorphous.

10. The method of claim 1 comprising initially forming the first layer of first material to be amorphous, and transforming the first layer of first material to be substantially crystalline prior to forming the second layer of first material, the second layer of first material initially being formed to be amorphous.

11. The method of claim 1 comprising initially forming the first layer of first material to be amorphous, and transforming the first layer of first material to be substantially crystalline prior to forming the second layer of first material, the second layer of first material initially being formed to be amorphous, and transforming the second layer of first material to be substantially crystalline after forming another layer thereover.

12. The method of claim 11 wherein the another layer comprises the second capacitor electrode.

13. The method of claim 1 comprising initially forming the first layer of first material to be amorphous, and transforming the first layer of first material to be substantially crystalline prior to forming the second layer of first material, the second layer of first material initially being formed to be crystalline.

14. The method of claim 1 wherein the first layer of first material is provided with a selected finished crystalline structure prior to forming the second layer of first material.

15. The method of claim 1 wherein the first layer of first material is formed to a thickness of from 10% to 90% of a finished combined thickness of the first and second layers.

16. The method of claim 1 comprising forming the first layer of first material to be crystalline in its final composition, and forming the second layer of first material to be crystalline in its final composition.

17. The method of claim 1 comprising forming the first layer of first material to be crystalline in its final composition, and forming the second layer of first material to be amorphous in its final composition.

18. A method of forming a capacitor comprising:

forming a first capacitor electrode;

forming a first layer of a first capacitor dielectric material over the first capacitor electrode;

annealing the first layer of the first capacitor dielectric material at a temperature of at least 300° C for a time period sufficient to achieve a selected crystalline structure of the first material;

after annealing the first layer, forming a second layer of the first capacitor dielectric material on the annealed first layer, the second layer of first material not being exposed to a temperature of 500°C or greater before deposition of a subsequent layer thereover; and

forming a second capacitor electrode over the second layer of the first capacitor dielectric material.

19. The method of claim 18 wherein the first dielectric material comprises a titanate compound.

20. The method of claim 18 wherein the first dielectric material comprises Ta_2O_5.

21. The method of claim 18 wherein the first dielectric material is selected from the group consisting of barium strontium titanate, strontium titanate, strontium bismuth titanate and lead lanthanum zirconia titanate, and mixtures thereof.

22. The method of claim 18 wherein the first layer is formed to a thickness of from 10% to 90% of a finished combined thickness of the first and second layers.

23. The method of claim 18 comprising initially forming the first layer of first material to be amorphous.

24. The method of claim 18 comprising initially forming the second layer of first material to be amorphous.

25. The method of claim 18 comprising initially forming the first layer of first material to be amorphous, and initially forming the second layer of first material to be amorphous.

26. The method of claim 18 comprising initially forming the second layer of first material to be amorphous, and annealing the second layer of first material at a temperature of 500°C or greater to form said second layer to be crystalline.

27. The method of claim 26 wherein the second layer annealing occurs after forming the second capacitor electrode.

28. A method of forming a capacitor comprising:

forming a first capacitor electrode;

forming a first layer of a first titanate compound comprising capacitor dielectric material over the first capacitor electrode;

forming a second layer of a second titanate compound comprising capacitor dielectric material on the first layer, the second titanate compound being different from the first titanate compound; and

forming a second capacitor electrode over the second layer of second titanate compound comprising capacitor dielectric material.

29. The method of claim 28 comprising forming the second capacitor electrode to impart one of compressive or tensile stress on the second layer of the second titanate compound during second electrode formation.

30. The method of claim 29 comprising forming the second capacitor electrode to predominately comprise a material selected from the group consisting of TiN_x, WN_x, TaN_x, $PtRh_x$, $PtRu_x$, $PtIr_x$, and mixtures thereof.

31. The method of claim 29 comprising doping the second capacitor electrode during its formation with a conductivity enhancing impurity to achieve a selected stress on the second layer of the second titanate compound.

32. A method of forming a capacitor comprising:

forming a first capacitor electrode;

forming a first layer of a first titanate compound comprising capacitor dielectric material over the first capacitor electrode;

annealing the first layer of the first titanate compound comprising capacitor dielectric material at a temperature of at least 300° C for a time period sufficient to achieve a selected crystalline structure of the first titanate compound of the first layer;

after annealing the first layer, forming a second layer of a second titanate compound comprising capacitor dielectric material on the annealed first layer, the second layer not being exposed to a temperature of 500°C or greater before deposition of a subsequent layer thereover, the second titanate compound being different from the first titanate compound; and

forming a second capacitor electrode over the second layer of second titanate compound comprising capacitor dielectric material.

33. A method of forming a capacitor comprising:

forming a first capacitor electrode;

forming a first layer of a first capacitor dielectric material over the first capacitor electrode;

forming a second layer of a second capacitor dielectric material on the first layer, one of the first and second materials comprising a titanate compound and the other comprising Ta_2O_5; and

forming a second capacitor electrode over the second layer of second capacitor dielectric material.

34. The method of claim 33 comprising forming the second capacitor electrode to impart one of compressive or tensile stress on the second layer of the second capacitor dielectric material during second electrode formation.

35. The method of claim 34 comprising forming the second capacitor electrode to predominately comprise a material selected from the group consisting of TiN_x, WN_x, TaN_x, $PtRh_x$, $PtRu_x$, $PtIr_x$, and mixtures thereof.

36. The method of claim 34 comprising doping the second capacitor electrode during its formation with a conductivity enhancing impurity to achieve a selected stress on the second capacitor dielectric material.

37. A method of forming a capacitor comprising:

forming a first capacitor electrode;

forming a first layer of a first capacitor dielectric material over the first capacitor electrode;

annealing the first layer of the first capacitor dielectric material at a temperature of at least 300° C for a time period sufficient to achieve a selected crystalline structure of the first capacitor dielectric material of the first layer;

after annealing the first layer, forming a second layer of a second capacitor dielectric material on the annealed first layer, the second layer not being exposed to a temperature of 500°C or greater before deposition of a subsequent layer thereover, one of the first and second materials comprising a titanate compound and the other comprising Ta_2O_5; and

forming a second capacitor electrode over the second layer of second capacitor dielectric material.

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38. A capacitor comprising a pair of capacitor electrodes having capacitor dielectric material therebetween comprising a composite of two immediately juxtaposed and contacting, yet discrete, layers of the same capacitor dielectric material.

39. The capacitor of claim 38 wherein one of the discrete layers is crystalline and the other is amorphous.

40. The capacitor of claim 38 wherein both of the discrete layers are crystalline, and comprising an interface where the discrete layers contact which is characterized by a perceptible change in crystallinity from one layer to the other.

41. The capacitor of claim 40 wherein the perceptible change in crystallinity is characterized by a perceptible lateral shift in grain boundaries from one layer to the other.

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42. The capacitor of claim 38 wherein the same capacitor dielectric material comprises a titanate compound.

43. The capacitor of claim 38 wherein the same capacitor dielectric material comprises Ta_2O_5.

44. A capacitor comprising a pair of capacitor electrodes having capacitor dielectric material therebetween comprising a composite of two immediately juxtaposed and contacting, yet discrete, layers of two different capacitor dielectric materials, said two capacitor dielectric materials including two different titanate compounds.

45. A capacitor comprising a pair of capacitor electrodes having capacitor dielectric material therebetween comprising a composite of two immediately juxtaposed and contacting, yet discrete, layers of two different capacitor dielectric materials, one of the two different materials comprising a titanate compound and the other comprising Ta_2O_5.

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